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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte ASSAF GOVARI

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Appeal 2008-6324[1]
Application 10/029,473
Technology Center 3700

____

Decided:[2] March 23, 2009

____

Before DEMETRA J. MILLS, LORA M. GREEN, and
FRANCISCO C. PRATS, *Administrative Patent Judges*.

PRATS, *Administrative Patent Judge*.

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[1] Biosense Webster, Inc., a California Corporation, is the real party in interest.

[2] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims to apparatuses and methods for tracking an object in the body of a subject. The Examiner has rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

STATEMENT OF THE CASE

Claims 1-49 are pending and on appeal (App. Br. 2).[3] The appealed independent claims are 1, 11, 17, 21, 23, 27, 38, 44, and 48 (*see id.* at 2-10). Claims 1, 11, 17, and 27 illustrate the appealed subject matter and read as follows:

Claim 1. Apparatus for tracking an object in a body of a subject, comprising:
a plurality of field generators, adapted to generate electromagnetic fields at different, respective frequencies in a vicinity of the object;
a radio frequency (RF) driver, adapted to radiate a RF driving field toward the object;
a wireless transponder, adapted to be fixed to the object, the transponder comprising:
at least one sensor coil, coupled so that an electrical current flows in the at least one sensor coil responsive to the electromagnetic fields;
a control circuit, coupled to the at least one sensor coil so as to generate an output signal indicative of the current; and
a power coil, coupled to receive the RF driving field and to convey electrical energy from the driving field to the control circuit, and further coupled to transmit the output signal generated by the control circuit; and

[3] Appeal Brief filed June 23, 2006.

a signal receiver, adapted to receive the output signal transmitted by the power coil and, responsive thereto, and signal processing circuits operatively connected to the signal receiver for determining three dimensions of position information and at least two dimensions of orientation information wherein the information is the position and orientation coordinates of the object in the body of the subject.

Claim 11. Apparatus for tracking an object in a body of a subject, comprising:
a radio frequency (RF) driver, adapted to radiate a RF driving field toward the object at a driving frequency;
one or more field generators, adapted to generate electromagnetic fields in a vicinity of the object at respective field frequencies, in synchronization with the driving frequency;
a wireless transponder, adapted to be fixed to the object, the transponder comprising:
at least one sensor coil, coupled so that an electrical current flows in the at least one sensor coil responsive to the electromagnetic fields;
a control circuit, coupled to the at least one sensor coil so as to generate an output signal indicative of the current; and
a power coil, coupled to receive the RF driving field and to convey electrical energy from the driving field to the control circuit, and further coupled to transmit the output signal generated by the control circuit; and
a signal receiver, adapted to receive the output signal transmitted by the power coil and, responsive thereto, and signal processing circuits operatively connected to the signal receiver for determining three dimensions of position information and at least two dimensions of orientation information wherein the information is

the position and orientation coordinates of the object in the body of the subject.

Claim 17. Apparatus for tracking an object in a body of a subject, comprising:
a radio frequency (RF) driver, adapted to radiate a RF driving field toward the object;
one or more field generators, adapted to generate electromagnetic fields in a vicinity of the object;
a wireless transponder, adapted to be fixed to the object, the transponder comprising:
at least one sensor coil, coupled so that an electrical current flows in the at least one sensor coil responsive to the electromagnetic fields;
a control circuit, coupled to the at least one sensor coil so as to generate an output signal indicative of an amplitude of the current and of a phase of the current relative to a phase of the electromagnetic fields; and
a power coil, coupled to receive the RF driving field and to convey electrical energy from the driving field to the control circuit, and further coupled to transmit the output signal generated by the control circuit; and
a signal receiver, adapted to receive the output signal transmitted by the power coil and, responsive to the amplitude and phase of the current indicated by the output signal, and signal processing circuits operatively connected to the signal receiver for determining three dimensions of position information and at least two dimensions of orientation information wherein the information is the position and orientation an orientation of the object in the body of the subject.

Claim 27. A method for tracking an object in a body of a subject, comprising:
positioning a plurality of field generators so as to generate electromagnetic fields at different,

> respective frequencies in a vicinity of the object;
> positioning a radio frequency (RF) driver to radiate a RF driving field toward the object;
> adapting to be fixed to the object, a wireless transponder comprising at least one sensor coil and a power coil, so that an electrical current flows in the at least one sensor coil responsive to the electromagnetic fields;
> receiving the RF driving field using the power coil so as to derive electrical energy therefrom;
> generating an output signal at the wireless transponder indicative of the current flowing in the sensor coil, using the electrical energy derived from the RF driving field by the power coil;
> transmitting the output signal from the wireless transponder using the power coil; and
> receiving and processing the output signal to determine three dimensions of position information and at least two dimensions of orientation information wherein the information is position and orientation coordinates of the object in the body of the subject.

The Examiner cites the following documents as evidence of unpatentability:

Ishikawa et al.	US 6,447,448 B1	Sep. 10, 2002
Mullick et al.	US 2003/0167000 A1	Sep. 4, 2003

The following rejection is before us for review:

Claims 1-49 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishikawa in view of Mullick (Ans. 3-4).

OBVIOUSNESS

ISSUE

The Examiner cites Ishikawa as disclosing "all the elements of the current invention including a wireless transponder having at least one sensor coil, a control circuit and a power coil so arranged so as to transmit RF signals wherein the signal includes among other information, positional information of the transponder (see col. 5, line 44- col. 6, line 43)" (Ans. 3).

The Examiner concedes that Ishikawa does "not disclose a plurality of field generators," but finds that Ishikawa "states that interrogation generators are well known in the art (see col. 6, lines 30-43)" (Ans. 3). Therefore, the Examiner concludes, a person of ordinary skill in the art would have considered it obvious "to have used a number of generators in order to interrogate the position of the transponder" (*id.*).

The Examiner also concedes that Ishikawa does not "teach circuits to determine three dimensions of position and at least two positions of orientation" (*id.*). However, the Examiner finds, "[i]n the same field of endeavor, Mullick . . . teach[es] a transponder (or capsule) with a position and orientation monitor including <u>six degrees of freedom</u> to allow for a more accurate determination of the location of the transponder with respect to the body (see paragraph 0061)" (*id.*). Based on the references' teachings, the Examiner concludes that a person of ordinary skill in the art would have considered it obvious "to have modified Ishikawa . . . and incorporated the teaching of Mullick . . . in order to more accurately determine the location of the transponder, both its position and orientation" (*id.* at 3-4).

Appellant concedes that Ishikawa discloses "implanted orthopedic sensors that are substantially spherical semiconductor balls implanted in

orthopedic structures for functions such as sensing and/or stimulation," and that "[r]emote energizing and interrogation is briefly mentioned on Col. 6, lines 30-44" (App. Br. 11). However, Appellant argues, "there are no teachings, suggestions or even inferences in Ishikawa et al. directed toward an apparatus and method for tracking an object in the body using a combination of novel features such as" recited in the claims (*id.*).

Appellant further concedes that Mullick discloses "a miniature ingestible capsule 12 with an illuminator 10 for providing light into the gastrointestinal tract, a lens and imaging array 16 arrangement, a transceiver 18 and a power source 22 to provide power to these components," and that Mullick "generally discloses the existence of methods used to determine six degree of freedom pose of a remote object. Par. No. [0061]" (*id.* at 12). However, Appellant argues, Mullick "fails to address any further specifics" (*id.*).

Thus, Appellant argues, one "can easily ascertain that there are significant differences between the teachings of these prior art references and the Applicant's claimed invention especially since none of these references teach or suggest a combination of novel features and method steps for tracking an object in the body using the novel combination" of the features recited in the claims (*id.*). Moreover, Appellant argues, rather than disclosing the sensor coil recited in the appealed claims, Mullick teaches an RF or EM beacon that reflects signals; therefore, "one of ordinary skill in the surgical navigation field would be entirely discouraged from following the path set out in the teachings Mullick et al. as well as Ishikawa et al. And, it is clear that both of these references actually teach away from Applicant's claimed present invention" (*id.* at 13).

Appellant further argues that the Examiner has failed to establish that the cited references would have motivated a person of ordinary skill in the art "to combine the miniature ingestible capsule containing radar-like beacon technology of Mullick et al. with the semiconductor ball implant of Ishikawa" (*id.* at 14). Rather, Appellant argues, the appealed rejection is an unreasonable hindsight-based attempt to arrive at the claimed invention, based on "absolutely no indication in the limited teachings of Mullick et al. (and the Ishikawa et al. reference for that matter) that [the] modification (as suggested by the Examiner) could ever be feasible or even desirable" (*id.* at 15).

In view of the positions advanced by Appellant and the Examiner, the issue with respect to this rejection is whether the Examiner has made a prima facie case that a person of ordinary skill in the art would have considered the claimed apparatuses and methods obvious in view of Ishikawa and Mullick.

FINDINGS OF FACT ("FF")

1. Ishikawa discloses "an implantable integrated circuit for use with implantation in an organic medium associated with an organic organism. The integrated circuit includes a substantially spherical shaped substrate" (Ishikawa, col. 1, ll. 51-54).

2. Ishikawa describes one embodiment as follows:

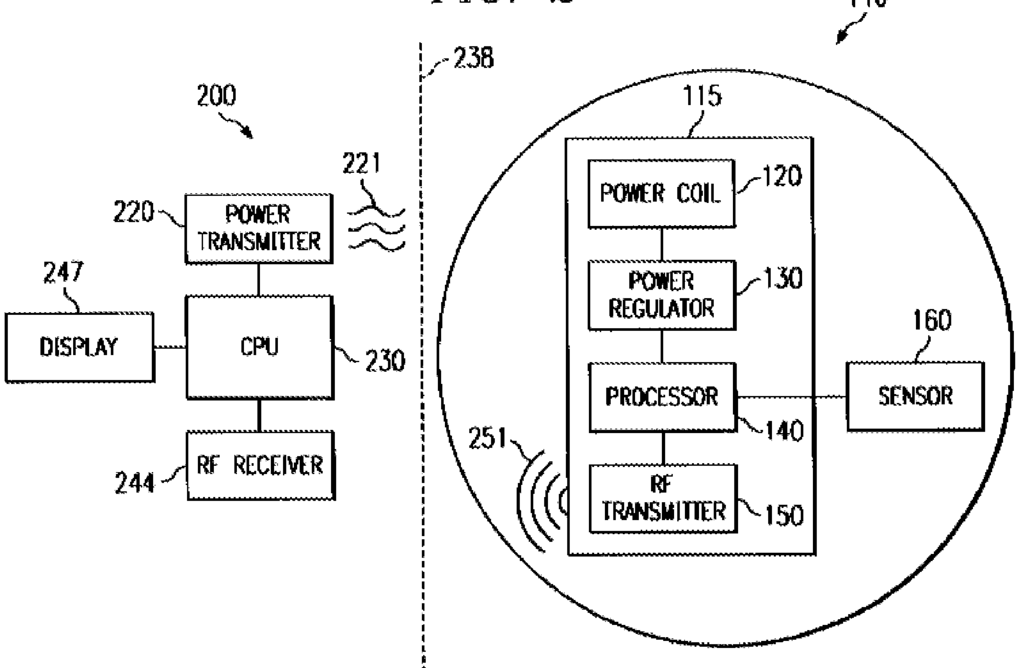
> [T]he substantially spherical integrated circuit is implanted in an orthopedic medium such as tendons, ligaments, and bone. Transponders which function as position sensors can be temporarily affixed to bone intraoperatively to allow correct positioning of artificial limbs or joints (angle of inclination). Current methodology for alignment of hip joints requires manual and visual means leading to malalignment, a major cause of morbidity in patients undergoing this procedure. Implantable prosthetic devices containing multiple position

> sensor balls can detect the angle of movement of a prosthetic device. Following artificial knee and shoulder replacement, increasing ranges of movement are required to rehabilitate the joints. Position sensor balls can be programmed to elicit a signal once the goal range of motion is achieved[.] Every few days the goal can be increased to facilitate the recovery period postoperatively.

(Ishikawa, col. 2, ll. 1-17.)

3. Figure 2 of Ishikawa, reproduced below, shows "a block diagram of a ball IC [(integrated circuit)] and an external monitoring and control station, according to a disclosed embodiment" (Ishikawa, col. 5, ll. 44-46):

FIG. 2



> Figure 2 shows:
>
> [D]ashed line 238 separat[ing] the ball IC 110 on the right side, as deployed within the patient's body, from an external control station 200, on the left side of the illustration, and located outside of the patient's body. The station 200

> includes a CPU 230 that is in communication with and controls a power transmitter 220, an RF receiver 244, and a display panel 247. When the station 200 is in proximity to the patient's body so that it can communicate with the ball IC 110, the CPU 230 initiates an query to the ball 110 by powering up the power transmitter 220. The power transmitter 220 directs low frequency electromagnetic radiation 221 at the patient's body and ball 110 therein. The varying magnetic field component of the electromagnetic radiation 221 induces a current in the power coil 120 of the ball 110. The power regulator 130 then converts the AC current induced in the power coil 120 to DC current, which is then regulated by the regulator 130 to provide a relatively constant voltage level (e.g., three volts) to the other circuits of the ball 110, including the processor 140, transducer 160, and RF transmitter 150. Note that an alternative to using separate coils for the inductance or power coil 120 and RF transmitter 150, a single antenna coil could be used.

(Ishikawa, col. 5, l. 46, through col. 6, l. 1.)

Thus, Ishikawa's device has the claimed radio frequency driver (power transmitter 220), the claimed sensor coil (sensor 160), the claimed control circuit (processor 140), power coil (120), and signal receiver (244).

4. Ishikawa discloses that once the ball is energized by the magnetic field, the ball "can sense a quantitative condition as measured by the sensor 160 (or provide electrical stimulation, as one example of an actuator function)" (Ishikawa, col. 6, ll. 7-9). Thus, the ball "can be implanted in bone, ligaments, and cartilage to sense pressure, tensile strength, strain, position, and compression conditions associated with prosthetics and surgically implanted devices" (*id.* at col. 6, ll. 10-13).

5. Ishikawa discloses that the processor 140 in the ball can convert "the electrical signals from the transducer 160 into digital data for accurate transmission out to the station 200" (Ishikawa, col. 6, ll. 18-20). Thus, the

"digital data signals representing the measured parameter are then modulated onto a carrier frequency signal by the RF transmitter 150 and transmitted by radio waves 251 outside of the body for reception by the RF receiver 244" (*id.* at col. 6, ll. 20-24).

6. Once the receiver 244 obtains the signals, the "CPU 230 then demodulates the RF carrier frequency signal to extract the measured parameter data, and stores the data in a computer memory . . . . The CPU 230 can also report the measured data to the patient or a technician by means of the display 247" (Ishikawa, col. 6, ll. 24-29).

7. Ishikawa discloses:

> Systems that energize and interrogate remote electronic devices using electromagnetic energy and RF communication are well known. Such remote electronic devices are sometimes referred to as passive transponders. Examples are described in the following U.S. Pat. No. 4,345,253, entitled "Passive Sensing and Encoding Transponder," issued Aug. 17, 1982; U.S. Pat. No. 4,857,893, entitled "Single Chip Transponder Device," issued Aug. 15, 1989; U.S. Pat. No. 5,252,962, entitled "System Monitoring Programmable Implantable Transponder," issued Oct. 12, 1993; and U.S. Pat. No. 5,347,263, entitled "Electronic Identifier Apparatus and Method Utilizing a Single Chip Microcontroller and an Antenna Coil," issued Sep. 13, 1994, which are hereby incorporated by reference.

(Ishikawa, col. 6, ll. 30-43.)

8. Mullick discloses "a type of non-tethered device that is ingested by the patient, thereby passing through the entire gastrointestinal tract, sending images and data through a telemetry means" (Mullick [0012]).

9. In one embodiment, Mullick's device is an ingestible, but non-digestible, capsule that "comprises an impermeable anterior and posterior

membrane, a transparent window, an imaging device, a pose beacon, a transmitter, and a power supply, and an external unit comprising a data reception device, a recording device, and a pose detection system" (Mullick [0018]).

10. Mullick describes its device's function, once swallowed, as follows:

> An illuminator 10 inside the capsule 12 projects light into the gastrointestinal tract. Images enter the capsule through a lens 14, impinging on an imaging array 16, the signal from which is then transmitted by a transceiver 18 to a transceiver 20 outside of the capsule. A power source 22 inside the capsule provides power to the imaging array 16, transceiver 18, and illuminator 10. The data from the transceiver 18 is then relayed to a recording and display device 24. Simultaneously, a pose detection system 26 tracks a beacon 28 located inside the capsule and relays tracking information to the recording and display system 24, which forms a display 30.

(Mullick [0053]; *see also* Figure 1.)

11. Mullick describes the function of the pose beacon and detector as follows:

> The pose beacon 52 provides a useful auxiliary piece of information, the real-time position of the capsule relative to the patient's body. This information will eliminate the discomfort of a tether or the guesswork necessary in pinpointing the location of abnormality by simple visual examination of the video or by time-tracking the video. There currently exist several proven methods to determine the six degree-of-freedom pose of a remote object, most often used in robotics to track mobile robots or to digitize human movements, for example, in hand-tracking and head-tracking controllers. These devices use a RF or EM beacon that reflects signals from an externally fixed transmitter, somewhat like a miniature radar system. Distances are typically limited to a few meters cubic, which fall well within the specifications for this device. The beacons are passive devices and will not draw power from the onboard

> battery. External stations that can be strapped or belted to the patient provide the signal sources. Given the recorded time-spacing tracking information, there are numerous ways to develop a correspondence between the video images and the patient's internal structures. For example, a computer can overlay the time-parametrized space-path of the capsule on an image based on CAT scan or MRI of the patient, or over a computer-generated model based on the patient's body size and shape. The video can then be synchronized with the capsule's motion on the computer screen.

(Mullick [0061].)

PRINCIPLES OF LAW

> In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. "[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references."

In re Fritch, 972 F.2d 1260, 1265 (Fed. Cir. 1992) (citations omitted, bracketed material in original).

Thus, as the Supreme Court pointed out in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, ___, 127 S. Ct. 1727, 1741 (2007), "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." Rather, as the Court stated:

> [I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements *in the way the claimed new invention does* . . . because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed

> discoveries almost of necessity will be combinations of what, in some sense, is already known.

Id. (emphasis added); *see also id.* at ____, 127 S. Ct. at 1740-41 (requiring a determination of "whether there was an apparent reason to combine the known elements *in the fashion claimed* by the patent at issue") (emphasis added).

The Court in *KSR* also stressed that "'rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, *there must be some articulated reasoning* with some rational underpinning to support the legal conclusion of obviousness.'" *Id.* at ___, 127 S. Ct. at 1741 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (emphasis added).

Accordingly, as our reviewing court has stated, "obviousness requires a suggestion of all limitations in a claim." *CFMT, Inc. v. Yieldup Int'l. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)).

While holding that some rationale must be supplied for a conclusion of obviousness, the Supreme Court nonetheless rejected a "rigid approach" to the obviousness question, and instead emphasized that "[t]hroughout this Court's engagement with the question of obviousness, our cases have set forth an expansive and flexible approach . . . ." *KSR,* 550 U.S. at ___, 127 S. Ct. 1727 at 1739. The Court also rejected the use of "rigid and mandatory formulas" as being "incompatible with our precedents." *Id.* at ___, 127 S. Ct. at 1741; *see also id.* at ___, 127 S. Ct. at 1742-43 ("Rigid preventative rules that deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it.").

The Court thus reasoned that the analysis under 35 U.S.C. § 103 "need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *Id.* at ___, 127 S. Ct. at 1741; *see also id.* at ____, 127 S. Ct. at 1742 ("A person of ordinary skill is . . . a person of ordinary creativity, not an automaton.").

Thus, "when the question is whether a patent claiming the combination of elements of prior art is obvious," the relevant inquiry is "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.* at ___, 127 S. Ct. at 1740.

Applying these concepts, the Court ultimately reaffirmed "that when a patent 'simply arranges old elements with each performing the same function it had been known to perform' and yields no more than one would expect from such an arrangement, the combination is obvious." *Id.* (quoting *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273 (1976)).

ANALYSIS

Appellant's arguments do not persuade us that the Examiner entirely erred in concluding that some of the rejected claims would have been obvious to a person of ordinary skill in the art. We do agree with Appellant, however, that the Examiner failed to adequately explain why a person of ordinary skill in the art would have considered it obvious to provide Ishikawa's apparatus with some of the claimed features.

Specifically, claim 1 requires the recited apparatus to have "a plurality of field generators, adapted to generate electromagnetic fields at different, respective frequencies in a vicinity of the [tracked] object." Similarly, claim

27 requires the recited process to include a step of "positioning a plurality of field generators so as to generate electromagnetic fields at different, respective frequencies in a vicinity of the [tracked] object."

We note that Ishikawa discloses that "[s]ystems that energize and interrogate remote electronic devices using electromagnetic energy and RF communication are well known. Such remote electronic devices are sometimes referred to as passive transponders" (Ishikawa, col. 6, ll. 30-33 (FF 7)). However, while the Examiner urges that this disclosure suggests using a plurality of interrogating field generators (Ans. 3), the Examiner fails to address or explain why a person of ordinary skill would have been prompted to adapt those generators to generate electromagnetic fields of different frequencies, as required in claims 1 and 27.

As noted above, "'rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, *there must be some articulated reasoning* with some rational underpinning to support the legal conclusion of obviousness.'" *KSR*, 550 U.S. at ___, 127 S. Ct. at 1741 (quoting *In re Kahn*, 441 F.3d at 988 (emphasis added)). Thus, because the Examiner did not provide any explanation as to why an ordinary artisan would have considered it obvious to provide a plurality of generators that generate electromagnetic fields of different frequencies, we are compelled to reverse the Examiner's rejections of claims 1 and 27, and their dependent claims 2-10 and 28-37.

However, the remaining claims do not recite that limitation, but instead recite, for example, "one or more field generators, adapted to generate electromagnetic fields in a vicinity of the [tracked] object" (claim

17 (App. Br. 21)). Thus, unlike claims 1 and 27, the remaining claims require as few as one field generator.

As the Examiner points out, Ishikawa discloses the use of interrogating generators to energize remote devices (FF 7), and also discloses the desirability of tracking the position of the implanted object (FF 2, 4). We therefore agree with the Examiner that an ordinary artisan would have reasonably inferred that it would be desirable to provide Ishikawa's device with one or more field generators so as to track the implanted object's position.

Ishikawa further discloses the desirability of tracking the relative orientation of the implanted circuit(s) so as to ascertain the relative positions and alignments of implanted prostheses and body parts (FF 2, 4). We therefore further agree with the Examiner that a person of ordinary skill in the art would have reasonably inferred that it would be desirable to provide Ishikawa's control station 200 (*see* FF 3) with circuits, like those in the pose detection system 26 of Mullick's device (FF 10, 11), capable of processing the signals received from the implanted device in a manner allowing determination of at least three dimensions of position information, and at least two dimensions of orientation information, as recited in the appealed claims.

We note, as Appellant argues, that Mullick teaches an RF or EM beacon that reflects signals rather than disclosing the sensor coil recited in the appealed claims (*see* FF 11). However we do not agree that this teaching would have dissuaded an ordinary artisan from practicing the claimed invention, nor do we agree that Ishikawa and Mullick fail to suggest modifying Ishikawa's device in the manner posited by the Examiner.

Rather, it appears that Appellant's argument does not appreciate the thrust of the Examiner's rejection. Specifically, the Examiner cites Mullick as disclosing the desirability of providing Ishikawa's device with signal processing circuits capable of determining the position and orientation of Ishikawa's implanted object (*see* Ans. 3 ("Ishi[k]awa . . . do[es] not teach circuits to determine three dimensions of position and at least two positions of orientation.").

Thus, it is not the Examiner's position that Mullick's entire radar-like pose tracking system (FF 10, 11) be incorporated into Ishikawa's device. Rather "[t]he teaching in Mullick et al. is used to address the step of determining three dimensions of position and at least two dimensions of orientation information" (Ans. 4).

As discussed above, because Ishikawa discloses the desirability of tracking the position and orientation of the implanted object (FF 2, 4), we agree with the Examiner that a person of ordinary skill in the art would have been prompted to provide Ishikawa's control station with signal processing circuits like those in Mullick's pose detection system to determine position and orientation information, as recited in the appealed claims. Moreover, given Ishikawa's disclosure of the desirability of monitoring the implanted object's position and orientation to ensure proper alignment and movement of implanted prostheses (FF 2, 4), we do not agree with Appellant that Ishikawa fails to suggest that its device could or would be desirably modified to include signal processing circuits allowing for determination of position and orientation information of the implanted object.

In sum, Appellant's arguments do not demonstrate that the Examiner failed to make a prima facie case of obviousness with respect to claims

11-26 and 38-49. We therefore affirm the Examiner's rejection of those claims as being obvious in view of Ishikawa and Mullick.

SUMMARY

We reverse the Examiner's rejection of claims 1-10 and 27-37 under 35 U.S.C. § 103(a) as being obvious over Ishikawa and Mullick.

However, we affirm the Examiner's rejection of claims 11-26 and 38-49 under 35 U.S.C. § 103(a) as being obvious over Ishikawa and Mullick.

TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

cdc

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